

CAMBION® callout

PUBLISHED BY CAMBRIDGE THERMIONIC CORPORATION, 445 CONCORD AVE., CAMBRIDGE, MASS. 02138. MAKERS OF CAMBION® GUARANTEED ELECTRONIC COMPONENTS

AN OCCASIONAL ORIENTATION OF SENSE AND NONSENSE FOR CAMBION COMPONENT CONNOISSEURS

SEPTEMBER 1968

VOL. 1 NO. 3

MINI-MINI MICRO-MINS LITTLE ANSWER TO DESIGNERS' PRAYERS



Noel Bevan, Seated at Plotting Table on Transatlantic Race

TE'S TWIST NEPTUNE'S TRIDENT

One of the competitors in the recent single-handed trans-Atlantic yacht race, Mr. Noel Bevan, pinned his hope on a CAMBION TE device, a highly sophisticated thermoelectric generator which converts heat from a paraffin oil stove into energy to power the yacht's transmitter. Mr. Bevan's design was transmitted to CAMBION via transatlantic telephone from CAMBION Electronic Products Limited in the United Kingdom. Delivery of the unit was made just a few days prior to the start of the race and installed aboard the "Myth of Malham". Mr. Bevan was delighted by our TE assist.

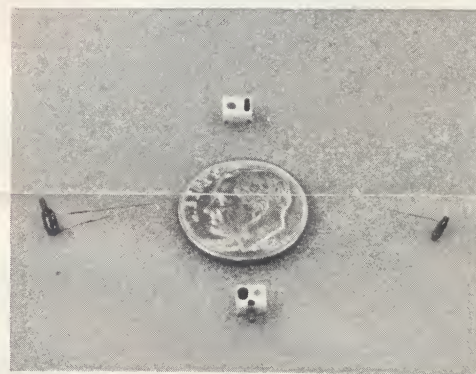
The device, about the size of a tape-recorder, does away with the need for a gasoline generator, thus saving on fuel storage, and cutting down on the weight aboard the yacht. PS: Noel Bevan made it across the Atlantic.

**REMEMBER: MINI-MINI MICRO-MINS
MEAN MODERN MOMENTUM**

Good things come in small packages, goes the old cliché. Certainly CAMBION has attempted to live up to the spirit of this old saying through introduction of a new range of miniature inductors designed to provide some of the tightest packaging possibilities yet conceived by the fertile minds of electronics engineers. This fall, CAMBION introduces a series of breakthroughs in state-of-the-art inductors in five varieties of truly micro-miniature variable and fixed inductors and in a new shielded variable inductor we believe to be the smallest in existence.

Known as part number series 1199, the variable printed circuit mountable electrostatically and electromagnetically shielded device measures a mere .270 max when inserted on a printed circuit board. The clever little devil comes in a EIA mean inductance range of $0.10 \mu\text{h}$ through $1000 \mu\text{h}$ over 25 values and offers unusually good Q readings for such a tiny package. For use in miniaturized equipment where extremely dense packaging is required, 1199 will eliminate such hazards as coupling and circuit cross interference.

In its range of truly micro-miniature inductors of the non-shielded type, CAMBION offers two so-called "monolithic" series, one fixed and one variable. The fixed series is known as 1053 and comes in a range of $0.10 \mu\text{h}$ through $1000 \mu\text{h}$ over 49 individual values and is packaged in a tiny rectangle measuring a mere .090 max in height by .125 wide by .160 long. It may be mounted in the same manner as hybrid chips on thick film substrates through heating of the substrate by the user to permanently bond the inductor. For tightly constructed resonant circuitry and decoupling applications, series 1053 sells at a phenomenally low price which we will be



CAMBION Micro-Min Coils
In Relation to Familiar Object

happy to tell you about upon receipt of your inquiry.

Sister to 1053 is part 1052, a variable "monolithic" type for film bonding and other miniaturized work, also designed to be substrate-compatible in a package size of .100 x .125 x .160. This ingenious little device comes in a range of 10 values from $0.10 \mu\text{h}$ through $1000 \mu\text{h}$.

The series 1050, a "bug-type" variable coil with flexible leads, features a flocked tuning slug for variation of inductance and is equipped with flexible leads for soldering to PC lands or thick film or thin film, allowing the designer compliance with several construction techniques and confidence in meeting stringent packaging parameters.

A diallyl packaged miniature coil is available in series number 1051 ranging from $0.10 \mu\text{h}$ through $10,000 \mu\text{h}$ over 20 values and fits the need of conventional PC design where a package not exceeding .160 x .100 x .260 will fill the bill.

Continued page two

CAMBION CALLOUT

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TWX: 617-499-9162

William G. Nowlin, Editor
Also: General Marketing Manager

We love to serve our customers, big or small, near or afar. If you're dying to be a new customer and simply need the info to crystalize your design, call, write or TWX me.

Think CAMBION! Think beautiful design! Keep your mind on the design objective — we do.



Editor's First Thought:
Design Objective

**REMEMBER: MINI-MINI MICRO-MINS
MEAN MIGHTY MITE**

USEFUL ELECTRONIC HOUSEHOLD HINTS

For the surface of a ball multiply square of the diameter by 3.1416 — to keep out from behind the logic 8-ball, specify one of CAMBION's 270-plus function cards.

A ton of coal is equal to two cords of wood to create steam — to avoid steamy cooling conferences, CAMBION's T.E. Manual does the trick.

PUFF, THE MAGIC DRAG-IN

How's come our 1869-1 glass capacitor is such a big seller? What does it offer? One of our big-time customers says: "More puff — and really smooth — for the price". Cigarette commercial? Pontificating by a pot-entate? No ciggie ad, this, but a paean to a span of 0.85 to 7.0 UUFD (puffs to you) at a really competitive price. All this, and no reversals, except the competition.

(Circle 1869-1)

©Cambridge Thermionic Corporation, 1968

WE GET LETTERS — NOT LETTUCE



"Who Will Pay for the Wall?"

After reading our "smashing" story in Issue One of the *Callout* re our tough-tough-tough 3623 coil forms, we received the following from Sven Björnehöfde of Stockholm, Sweden:

"Took four CAMBION .025 cage jacks 450-3230-01. Affixed same to the four legs of a 3623 coil form. Stood clear of prospect's desk. Wound up. Threw with all possible force against most distant wall. Picked up product and *parts of wall*, swaggered back to desk . . . Question: who will pay for wall?"

FOR FREE?



This letter speaks for itself:

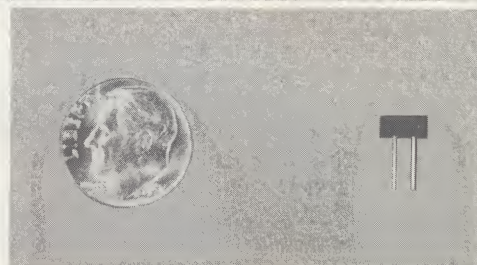
"It would be appreciated if you would send me one of your IC extractors. My finger nails are all broken and so are many of the "bugs" I try to extract. Thank you for developing a useful tool. — L. F. Bennett, M.I.E.E.E., The Plessey Company Limited, Poole, Dorset, England."

You need extraction assistance? Your nails under par? Drop us a note on the bingo card and we'll send you a free way out of your dingy digit dilemma. You can buy 'em in quantity, but one we'll give you for no.

(Circle Nail Saver)

Dear Customer:

Go sailing if you will, with a honey;
Keep beachin' till the sun drives you
funny,
Golf a bit on the links
To wring out the kinks,
But keep buyin' cause we really need
the money.



Think small —
Mini-Minis with standard
key and genuine dime

Continued from page one

Last of all in this strange and wondrous series of new inductors is encapsulated 1054, with a range of 0.10 μ h through 3300.0 μ h and great Q readings over 55 values of L.

Whether your taste as a bon vivant runs to girls in the long, the short, or the tall varieties; in skirts to maxis, minis or midis; your taste in mini-mini micro-minis is certain to be met by one or the other of this glamorous array of candidates for Miss CAMBION Inductor of 1968. Just shoot us the bingo card you will find in this issue circling the appropriate number or numbers, and we will volley back a set of drawings and prices. For those who insist, we may squeeze out a sample or two here and there if you are serious and ready to move in a hurry.

**REMEMBER: MINI-MINI MICRO-MINS
MEAN MINUS MISFITS**

Printed in USA

CAMBION CALLOUT

MORE ADVICE FROM YOUR FRIENDLY SALES MANAGER

—OR—

SECRET PLOYS TO KEEP CAMBION BOYS GETTING THEIR JOYS

With scores of sales engineers operating directly from this plant and through the offices of our many representatives about the nation and indeed all around the planet, planning itineraries for sales types calls for some careful evaluation back at GHQ. In attempting to arrange visits to customer and prospects, some places look better than others.

We usually expect low sales in Slow, Pa., and Wet, Wash. as well as in Praise, Ala. and Quite, Ill. There are always a few enticing pieces of geography for CAMBION in view of our product range, such as Shielded, Kans., Press, Mont., and Terminal, Penn. Some of our local boys urge a call or two in Whatta, Mass. but we prefer Show, Me. We look for an easy time in



"And When I Get To Junior, Miss."

chatting up the prospect in Shangri, La. and your editor (originally from Daddy, O.), plans to include in his next trip a visit to Junior, Miss.

We are looking for a distributor in Stockem, Minn. and salesmen naturally like to travel to Sellsum, Ore. and Gopher, Mo. Overseas, we have some interesting prospects in Bigg, Holl. and Koktail, Den. Our boys are ingenious types and if Mechanik, Ill. engineers are lacking, we call on Electri, Cal. men though never overlooking the role of the buyers in Purchasin, Mo. We also like to travel to Ohtoofive, Penn. and components engineers are easy to get along with in Thats, R.I. However, it's the same old story when the boys return with only 99% of their quota: the boss will want to know Wyo.

USEFUL ELECTRONIC HOUSEHOLD HINTS

Diameter of a circle may be found by multiplying the circumference by .31831 — To avoid being circled by angry production managers specify the right one of CAMBION's 22,780 components.



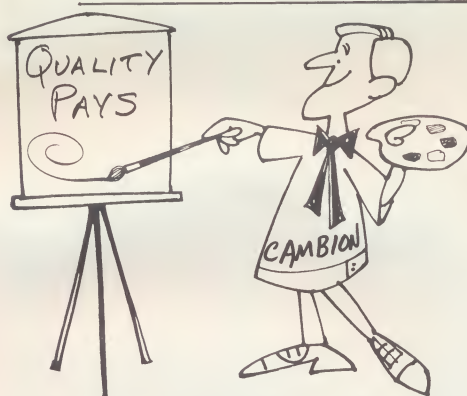
Haute Couture Turns You On

HAUTE COUTURE . . . THE WORLD OF FASHION

Cambion business travelers keep an eye open for trends in design *everywhere*. A hot bulletin from abroad:

The pinnacles of Parisian fashion are le bluejean et le sweatshirt. Bluejeans are never blue but do come in other standard EIA colors, including shocking pink, oo-la-la orange, passionate purple, rock n'roll red, violent violet, and virgin white.

Sweatshirts *must* bear the inscription of only the top US colleges. American originals of Ivy League schools command the equivalent of \$7.50. For the working girl Slippery Rock Teachers sweatshirts are available at \$6.95.



THE WORLD'S OLDEST DISCOVERY

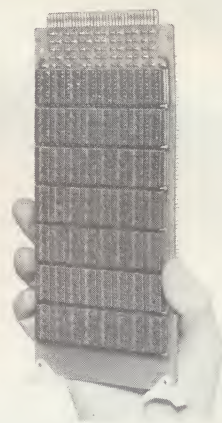
A familiar buyer friend of ours who placed orders for special terminals again and again, liked to scream robbery and murder at many a quote over the years. One day he called to tell us he had found a better source: cheaper, better delivery, no tool charges, etc. It was a sad adieu as we wished him happiness and good luck. About a month later, he called again, and reported he had his first shipment from the new supplier and all was as promised: good delivery, discounted invoice, et al. But suddenly, his voice rose several octaves: "The only trouble with this deal is the parts are no — good!" Welcome back, friend, to the world where you get what you pay for.

You asked about mini-skirts? Those spotted along the Champs Elysees were surprisingly long — typically 10 centimeters above the knee. (1 inch equals 2.54 cm). Lively London is the place. Here the world of micro-minis is in its most advanced state-of-the-art. Four inches is the standard here except for young mothers pushing baby carriages who are sedately Victorian with midi-length minis of 4½ inches. All dimensions are referenced from waist to hemline.

Have you kept your eye and mind on the art of microminiaturization found in CAMBION's IC Assys with the latest in TTL, HTL and LSI? Take a good long look at pages 89 thru 94 of the new LOGIC MANUAL.

(Bingo Card LM)

NEW HIGH DENSITY IC PACKAGING SYSTEM NEATO SOLUTION



Helping Hand for ICs

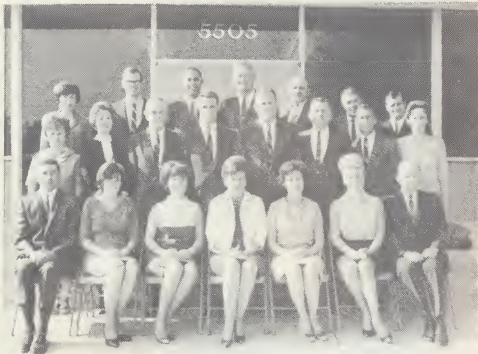
Extra! Fast-breaking news as we go to press! A sensational 56-pattern 16-pin Wire-Wrap® board with universal power pins is now ready for your high-density packaging requirements. (See photo). Full details on the 705-1080 board in the man's hand and the card file shown is yours, you lucky fellow, by circling 705-1080 on the bingo-bango.

©TM Gardner-Denver Co.

REMEMBER: MINI-MINI MICRO-MINS MURDER MIGRAINES

CAMBION CALLOUT

RICHEY ELECTRONICS' HOLLYWOOD TOUCH TOPS OFF SUPER-SERVICE



Across the face of North America CAMBION has franchised more than fifty distributors to permit the customer ready access to availability of our products in his local area.

From time to time we will introduce you to some of our distributors and hope that you will be intrigued enough to initiate contact with them if you are not already enjoying their services.

Richey Electronics of North Hollywood, California, is a long established (21 years) experienced and well staffed "limited line" distributor of connectors, hardware, switches and wire. By being extremely selective in manufacturers chosen for distribution, Richey can ensure maintenance of high standards of product quality to match high standards of Richey service.

This organization, in contrast to many distributors, specializes in only twenty-seven lines and is located in a modern building of over 15,000 sq. ft. with fifty-three employees and seven outside salesmen to serve customers. Computerization through a data processing system has recently been established to speed Richey's already swift service.

Those buyers and engineers frequently in contact with Richey by telephone, are probably already aware that Howard Richey maintains a "Bunny Club" through employment of some very talented girls on the Order desk. A few of these Hollywood honeys are shown in the accompanying photograph, along with some of the eager sales types ready to beat a path to your door.

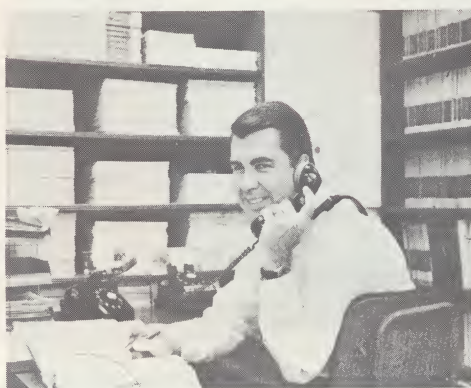
From anywhere in the metropolitan Los Angeles area, a telephone call to Richey Electronics at 213-877-2651 will give you that feeling that your business is wanted and that you are going to get action. Call a Bunny today!

BASH AWAY, BASH AWAY, BASH AWAY ALL

One of the homeliest little fellas in the components world is the plain old ordinary solder terminal, as turned out by CAMBION and unfortunately, several competitors, by the hundreds of millions every year. One of the saddest stories is the tale of the production manager who takes this little one or two cent beastie and spoils an expensive PC board due to cracking of the terminal, mis-application of the tooling with resultant sunburst effect on glass epoxy, or bashing of the terminal to the point where it is useless.

Some time ago, CAMBION, working closely with NASA experts, essentially solved this problem for all time. CAMBION offers not only the solder terminal itself in an amazing variety of configurations and shank lengths and flare and roll-over possibilities, but manufactures its own tooling and staking machines in the same old ivy-covered premises at 445 Concord Avenue, Cambridge.

First of all, CAMBION offers the most popular types of solder terminals in pre-annealed condition to the right degree of hardness for proper flaring and roll-over. Closely controlled production techniques assure lot to lot uniformity and with the right standard tooling such terminals should stake to the complete satisfaction of the average top-blowing plant manager. For those who require essentially 100% crack-free perfection, CAMBION can supply at nominal additional cost a set of special staking tools which are custom made and hand polished and rouged (sexy, eh?) and then actually inserted in a machine and run through a staking cycle of the proper terminal for check out before shipment.



**CAMBION Field Sales Manager
Ralph Cutting Fields Customer
Question — Wants to Know Yours**



Damage Dilemma?

CAMBION also offers a range of staking machines to accommodate CAMBION terminals and swaging tools — 3802 and 3803 lab models for small production lots; our famous 3804 solenoid-actuated controlled-pressure staking machine equipped with micro switch safety guard; and for those with very long runs of PC or terminal boards an automatic feed hopper-type staker able to deliver up to 115 terminals per minute to the operator.

We'd love to send you a special edition of our technical publication, **PRODUCT NEWS**, offering many tips on proper staking of terminals. This little publication has proved so popular that we are in an additional print run and if you circle the proper number on the handy bingo card, your copy will soon be on its way to help assuage any terminal tremors in your tum-tum.

(Circle "Bash Away")

CAMBION ICS FOR HIGH AND LOW CS

Yes! CAMBION does offer 0° to 70°C. logic assemblies off the shelf, and for military customers who need ICs over the range of -55° to +125°C, we are utilizing 5400 series DIPs. New cards are 783-5304 (Ten 4-input buffer drivers); 783-5344 (Fifteen 3-input nand gates); 783-5364 (Twenty 2-input nand gates); 783-5384 (Five 8-input nand gates); and 783-5409 (Eight J-K binary flip-flops). Let us know you want to know more, by mailing our handy-dandy bingo card, and we'll send you the full scoop.

(Circle Bingo 5400)

**REMEMBER: MINI-MINI MICRO-MINS
MEAN MAGNIFIED MYSTIQUE**

CAMBION CALLOUT

CAMBION DIGITAL DIGS OLD FASHIONED THO MOD

Over the past 26 years, Cambridge Thermionic Corporation has been a leading supplier of quality components to the electronics industry. Today the widely-publicized trademark CAMBION® identifies an unusually broad variety of components, available in any quantity, from insulated and solder terminals and miniaturized shielded R.F. coil forms to integrated circuit logic assemblies. With today's emphasis on IC system design, CAMBION has developed the broadest line of IC building blocks and accessory hardware in the industry.

A seasoned staff of engineers and technicians is active in product development, production and sales so that economy, reliability, quality and versatility — advantages sought by the customer — are designed into CAMBION's digital products.

These digital products are completely documented and specified in our technical publications. CAMBION also offers to the

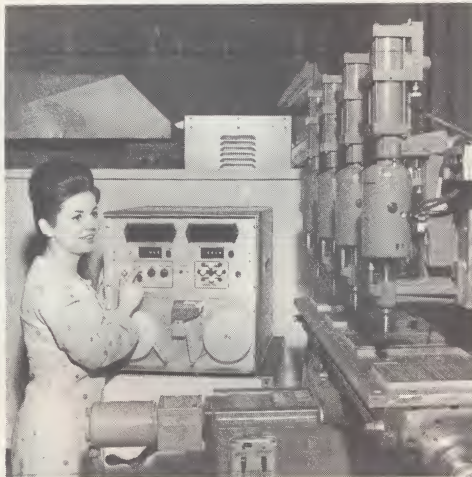


**Russ Petit, Applications Engineer,
Plots Solution for Customer**

end-user application engineering assistance. CAMBION's manufacturing facility has been designed for efficient production of printed circuit boards. Areas for each of the manufacturing steps are laid out for maximum production efficiency. The latest equipment in the field of numerical controls is utilized in drilling operations to hold PC costs to a minimum. Experienced graphic arts specialists and chemical technicians supervise design, layout, etching and plating of all PC board production.

From raw materials input to finished products, CAMBION's highly-systematized testing and inspection techniques control and verify product quality. Operation-by-operation controls completely document the production processes. Electrical tests are performed on semi-automatic equipment specially designed for CAMBION's Logic Assembly Cards.

CAMBION has its own Numerical Control system capability. These N/C systems insure accurate production whenever repetitive



**Sandra Boudreau Hits Button of
CAMBION-Built N/C for Automatic Drilling**

operations such as drilling, milling, or Wire-Wrapping are encountered. Whenever possible, CAMBION's standard products are fabricated using CAMBION's own N/C systems.

CAMBION is ready to provide the customer with price and delivery information, to efficiently process orders, and ship logic cards "from stock". Catalogs and application notes will be promptly furnished. Immediate, in-depth application service is available from knowledgeable application engineers. Our digital specialists can discuss system parameters and circuit specs and make recommendations tailored to specific needs.

Keeping abreast in the vast field of technology we are constantly striving to produce logic to state-of-the-art. However, one thing remains "old fashioned" — the state-of-quality that goes into all CAMBION products.



Section of Digital Assembly Area

THE STRANGE WORLD OF ELECTRONICS

Swish Socket:

First sale of our new 703-3898-01-03-16 DIP socket in England was to Rolls Royce — maker of jet engines and classic cars. Quality knows quality.

Fuzzy Fact:

We offer Registered Catalogs to key component customers, and often call 'em "Registered Cats" in verbal shorthand. Met a man who overheard this remark, and said: "Like wild, man — the fuzz is bookin' all us hipsters on the least pretense. What's a cat gonna do?"



"Registered Cats?"

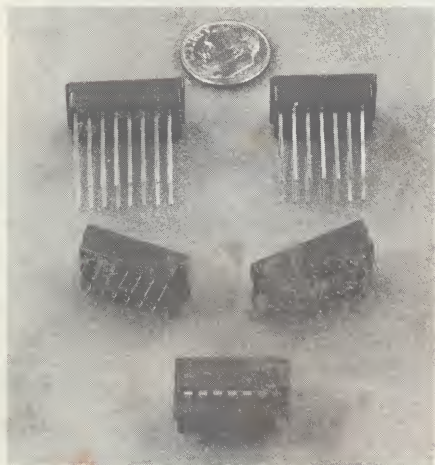


**"He FORGOT to Spec
CAMBION Micro-Mins?"**

**REMEMBER: MINI-MINI MICRO-MINS
ARE MIRABILE DICTU**

CAMBION CALLOUT

SOCKET TO ME (X 4)



Sockets for Sophisti-Cats

In our previous issues of this paragon of modern industrial journalism, we told you about our 703-3898-01-03-16 socket, and isn't that a pile of numbers? We are happy to tell you now that our socket family is proliferating like crabgrass in July. Joining you lucky people this month are a Wire-Wrap® 14-pin version of our 16-pin Wire-Wrap 3898. This little fellow is cleverly known as 703-3897-01-03-16 and is essentially the same package size shorter by .100" and designed to accommodate standard 14-pin dual in-line IC's.

Adding tang to the designer's broth is a set of twinsies: 16-pin solder tang type 703-3789-01-04-12 and 14-pin solder tang 703-3788-01-04-12. These parts are in production and unfortunately some of them are still on our shelves, so we will be happy to send you

full information in order to transfer the happy burden from our shoulders to yours and to open up mounting possibilities of mounting ICs for your rapt (ouch!) and considered gaze.

To distinguish our solder tang versions, you will notice we have fiendishly changed our nomenclature slightly in the last two digits indicating that the solder tab types are in a lovely shade of red (-12) and the Wire-Wrap types are in a royal blue fit for a king. Featuring CAMBION'S famous tight-as-a-drum retention techniques, the trio of new sockets like fast-moving 3898 permit not one, not twelve, not twenty-five, not one hundred, but an essentially finite number of insertions and removals, at least to the point of reasonable expectations by unreasonable minds.

(Circle "Socket X 4")

WATCH CLOSELY NOW

We recently received an ad from a firm specializing in developing employees through instruction:

"Salesmen: Knowledge of an employer's products and services is vital to successful selling. But top-notch salesmen must also have poise, self-assurance, pleasing personalities and a proper mental set. Through hypnosis your sales staff can reinforce these important plusses which contribute to volume selling."

In the near future, dear customer, a gentleman from CAMBION will visit you. He has VERY large eyes.

FAMOUS CATALOG 700 IN NEW REVISED MARK III EDITION NOW AVAILABLE TO EAGER PUBLIC

With a total print run of more than 170,000 copies since its initial arrival on the market three years ago, CAMBION's famous catalog 700 is now expanded to 292 pages, many of them containing whole series and families of parts perhaps hitherto not known to your design engineering staff. With heavy emphasis in new families of chokes, hardware, and our renowned cage jack connector, the new edition is available by circling the appropriate number on the tricky little business reply card bound into this issue. Please let us know if we can bring you up-to-date with the latest and greatest in our line of 22,779½ guaranteed components.



My Hubby Reads Catalog
700 Every Night

CAMBRIDGE THERMIONIC CORPORATION
CAMBION
Standardize on Cambion... the guaranteed electronic components
445 CONCORD AVENUE, CAMBRIDGE, MASSACHUSETTS 02138

CAMBION CALLOUT Routing Sheet

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ALVIN & MURIEL	
MAO TSE-TUNG	

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